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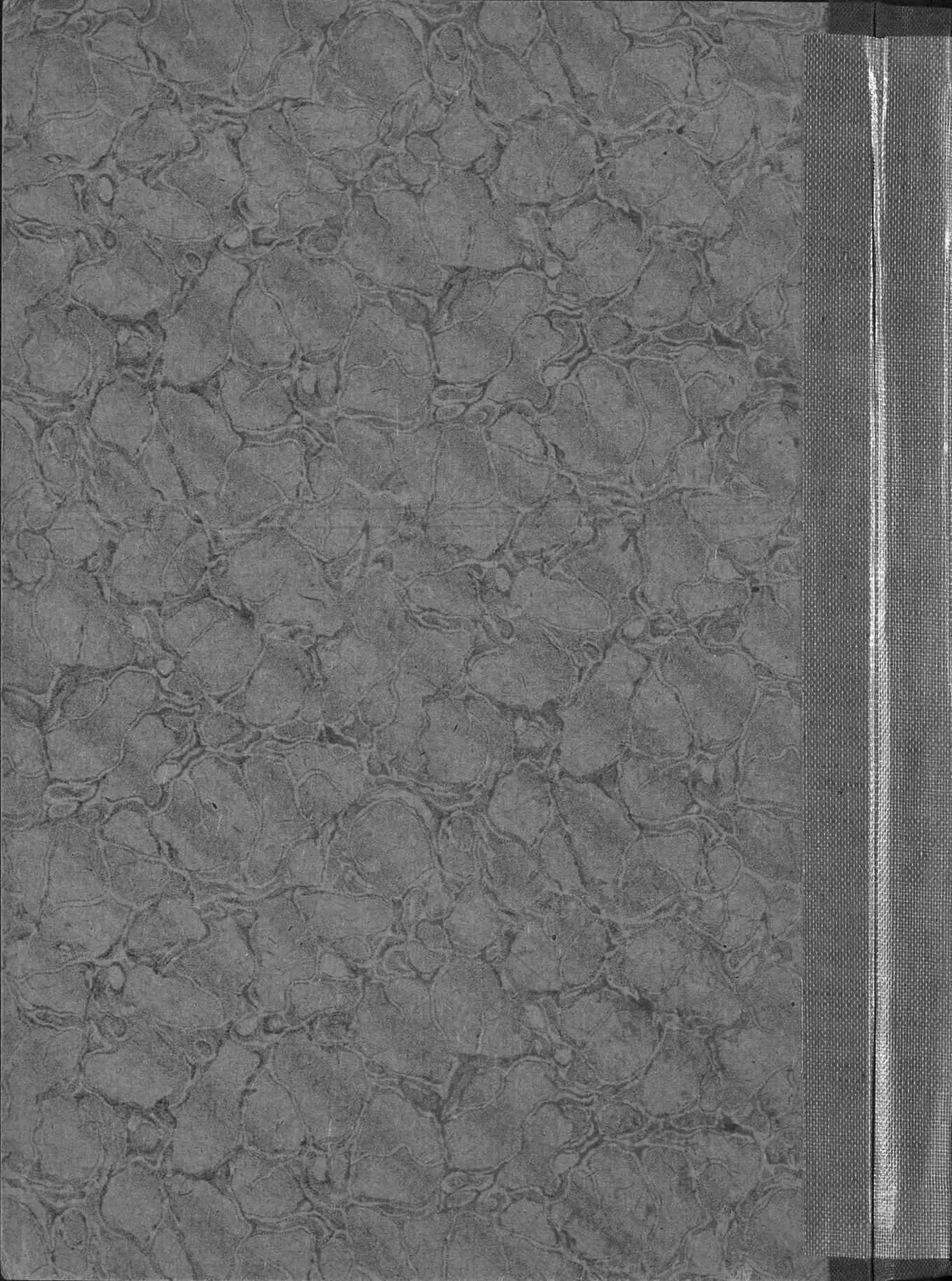
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Does it pay to Irrigate
in S. Alberta - Fairford.

Irrigation Farming
Leth. Herald

Irrigation Farming around Lethbridge
Better Balanced Farming
Why we want irrigation as an adjunct to
Dry Farming.



Does it Pay to IRRIGATE in Sunny Southern Alberta?

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Does it Pay to Irrigate in Sunny Southern Alberta?

Does irrigation pay with crops other than hay every season in the Lethbridge District is a question that has been in the minds of many farmers, when considering the possibility of getting irrigation water for their farms from one of the large irrigation projects that are under contemplation.

The growing of alfalfa on irrigated land has long passed the experimental stage in the vicinity of Magrath, Raymond and Coaldale fields 15 to 18 years old with good stands and in healthy condition can be pointed out by the local farmers. In the Coaldale district, where there is perhaps the largest area devoted to this crop, the results have been the same. Winter killing is, in fact, so rare that it is not seriously taken into consideration. The success with timothy grown under irrigation as well as mixtures of timothy and alfalfa is so well established that it requires no comment in passing. The growing of hay and pasture on dry land in this part of the province is difficult and even the most enthusiastic dry farmer is willing to admit that it is questionable whether it can be made profitable without the use of water for irrigation.

But grain growing is in a class by itself. By summer fallowing

it is possible to spread the work out so that large areas may be cultivated with a reasonable expenditure in the way of profit. It is also demonstrated that even in the driest seasons grain when sown on well prepared summer fallow is never an absolute failure. The phenomenal yields of grain in 1915-16, where it was not uncommon to obtain crops of wheat ranging from 50 to 70 bushels and more to the acre are still fresh in our minds. In an attempt to answer the question as to whether it will pay to irrigate grain one year with another, the table that accompanies this article was prepared.

In explaining the data given in this table it might be well to mention that when selecting the land on which to establish the Dominion experimental station the minister of agriculture chose a location which contained both irrigable and non-irrigable land. Almost exactly half of the farm is below the ditch and is irrigated, while the other half is above the ditch and dry land methods of farming are practised. At no time since the establishment of the farm has any effort been made to demonstrate the advantages of irrigation over dry land farming, but two farms have really been operated. On the dry farm an

attempt has been made to solve the problems that the dry land farmer is confronted with, such as the best methods of summer fallow, weed control, soil drifting, etc., etc.; while on the irrigated part of the station the questions that the man on irrigated land is particularly interested in have been dealt with. Similar crops have been raised on both parts of the farm; but so as to get the yield of a particular variety of one crop on both dry and irrigated land each year since the station was established, it has been necessary for us to take the yields from our plot work and not from our larger fields. This makes no real difference in comparing the results on irrigated and dry land except that the yields given are somewhat higher than would have been the case had large areas been used in every instance. Without doubt, however, the comparative increase due to irrigation has not been affected. By referring to the table it will be seen that in every season except 1915 the yields have been higher on irrigated land than on dry land with the single exception of peas in 1916. In 1916 our grain on irrigated land lodged badly and it was consequently impossible to harvest all the crops. The lodging on the dry land did not appear to any extent.

In comparing the results of the yields of grain in this table on the dry and irrigated land it is only fair to point out that on the dry land the crops have invariably been planted on summer fallowed land, so that to be really fair in the comparison the yields on the dry land should be divided by two, for on the irrigated land a

rotation has been followed and no summer fallowing has been done—that is to say, a crop of some kind has been produced every year on the land.

High Yields of Grain

It can readily be seen that the yields of grain on the dry land have been exceptionally good, showing by the average that a tidy profit may be obtained if careful summer fallow methods are adopted. Notwithstanding this fact our results—and they are substantiated by the best farmers in the irrigated district—indicate in a very clear manner that the yields of grain may be materially and consistently increased by irrigation.

If irrigation is thus beneficial to grain crops the natural question that follows is, how much does it cost to get this increase? To a farmer unfamiliar with the practice of irrigation the job of flooding the entire surface of all his fields seems almost appalling, while in reality it is not nearly as difficult, nor does it require a bit more skill than to accomplish many of the ordinary operations than are common to the growing of ordinary field crops.

To begin with, nature has left a great deal of the land in the southern part of the province almost ideally prepared for irrigation and it is evident that it will be necessary on little if any of the land to do any preparation before the land is plowed, so far as scraping of knolls and filling in hollows. This in many of the projects of the western States runs into many dollars per acre, while in the Lethbridge district

there has not been perhaps altogether a dozen farms where any work of such a character has been attempted, even in the most meagre manner. After the land is plowed before seeding the better farmers go over the land with a float or leveller (in lieu, perhaps, of one of the harrowings), with the object in view of filling in the dead furrows and cutting off crowns or back furrows, and thus make the spreading of water somewhat easier, although as an actual fact at the present time much less of this levelling is done than should be. Consequently the only additional cost so far as labor is concerned, in connection with raising a grain crop under irrigation as compared to dry land is the cost of making the field laterals and the labor of distributing the water.

Cost of Ditches

The cost of ditches varies with the different pieces of land, but generally speaking a good four-horse team and two men will ditch a quarter section of grain in four days. If a charge of \$12 a day is made for this outfit the cost of ditching would therefore amount to 30 cents per acre. With the usual sized head of water a man with ordinary skill can irrigate from five to eight acres in 24 hours. If his wages are charged at \$4 per day this would make the cost per acre run from 50 to 80 cents. So that the cost of ditching and irrigating grain once amounts to about \$1 per acre. To this must be added the ordinary maintenance charge which on the A. R. & I. system at Lethbridge is \$1, making a total of \$2 per acre.

Assuming, for example, that the bonded cost for an acre of irrigated land in some of the new projects would be \$30 per acre and that the bonds bear 6 per cent. this would then make a charge of \$1.80 per acre. This, added to the \$2 before mentioned, makes \$3.80, or in round figures \$4 per acre, to obtain the increase indicated in the table.

Smaller Farm Holdings With Irrigation

Irrigation spells diversification and more intensive farming than is the case with straight grain growing on dry land. To be able in our short season to irrigate our crops in the most advantageous manner and at the proper time the crops on a farm must be diversified and so arranged that it will not be necessary to irrigate the whole area at one time as would be the case were one raising grain exclusively. This diversification means that there will be certain parts of the farm devoted to hay and pasture. It means that our livestock holdings will be vastly increased and with the carrying of the livestock on the land the question of an adequate supply of humus in the soil will be solved. This in itself will modify to a great extent the troubles as we are beginning to experience in soil drifting. The weed problem will be taken care of to a large extent because weeds that thrive in grain disappear when the land is seeded down to alfalfa. The land after being seeded down to alfalfa for a few years is richer than ever for the growing of grain, and so the circle is completed and more stable and permanent conditions

are established in our farming operations.

The natural outcome of this change in conditions will without doubt mean smaller holdings. Our population will increase. This will mean better roads; our schools have more money available for their support, and social communications and conditions generally will be improved.

The change which will certainly come if a successful irrigation project is developed will mean that much greater revenue per acre annually will be produced than is the case with our present extensive grain farming. The total revenue from a quarter section under these new conditions will doubtless be as great and eventually greater, than from a half or three-quarters of a section as farmed without irrigation.

Results From Hay Grown With Irrigation

Comparative yields of alfalfa and timothy are not given, for the reason that the returns from these crops have been so low on the dry land that it was hardly thought worth while to tabulate them.

On the irrigated part of the station our average yield of cured alfalfa for the past ten years has been considerably over four tons per acre. Some seasons it has exceeded five tons per acre. This is the weight of the hay as it was hauled to the barn or stack.

There are no reliable statistics available giving the aver-

age yield for the district but it is probably in the neighborhood of three tons per acre. Individual farmers of course obtain more than this. Timothy being cut but once yields less. From one and one and a half tons to over two tons per acre are usually obtained.

Home Making

When we get down to the last analysis a successful farming community is one that has successful homes. To have a successful home the owner must first of all have a reasonable revenue each year and it must be an assured revenue. Irrigation will aid in this being an insurance against drouth. The owner must have a reasonably comfortable house surrounded by trees that afford shade as well as attractiveness during the summer, and shelter from our somewhat disagreeable winds in the winter time.

Irrigation will certainly make tree growing much easier and more rapid than it is at present. To keep the boys at home instead of having them trek to the city, we must make the farming operations interesting, and there is no one factor more potent in accomplishing this end than the keeping of lots of high-grade profitable livestock. Irrigation provides ample feed, both winter and summer for the maintenance of such stock.

If irrigation means for us more assured prosperity and better homes and a contented community is it not worth while?

**Comparative Results in Crops Grown on Dry Land and Irrigated
Land at the Experimental Station, Southern Alberta,
Giving Yields Per Acre.**

	WHEAT (Marquis)		OATS (Banner)		BARLEY (Sweet Chevalier)		PEAS (All Varieties)		POTATOES (Irish Cobbler)	
	Dry. Ir. Bu. Bu.		Dry. Irri. Bu. Bu.		Dry. Ir. Bu. Bu.		Dry. Ir. Bu. Bu.		Dry. Irri. Bu. Bu.	
1908	29	43	80	88	55	61	19	19	92	235
1909	31	40	56	77	44	69	19	19	159	605
1910	11	23	21	68	12	54	12	33	103	521
1911	Hailed		Hailed		Hailed		23	39	356	568
1912	28	50	77	145	41	77	31	62	296	501
1913	25	52	73	115	50	93	41	42	195	483
1914	24	54	49	113	25	90	19	52	400	495
1915	63	94	143	81	86	80	53	50	283	447
1916	48	71	118	157	64	79	46	37	475	530
1917	28	48	66	128	40	82	23	48	157	465
1918	14	62	24	104	17	91	16	48	93	505
Average for 11 years	30	53	70	108	43	78	27	41	237	487
Increase due to irrigation	23 bush.		38 bush.		35 bush.		14 bush.		250 bush.	
Increase due to irrigation	77 p. c.		54 p. c.		81 p. c.		51 p. c.		105 p. c.	

In all cases (except potatoes), the results are obtained from 1.60-acre plots. On this account the yields are higher than would probably have been the case had the fields been larger. The comparative results are no doubt the same—i.e., the per cent. of increase due to irrigation is the same as would have been the case had the fields been larger. On the dry land the crops were in all cases planted on summer fallow land. On the irrigated land the grain crops were grown on land that had raised a hoed crop of some kind the year previous, and the potatoes were usually planted on grain land.



